

REMARKS

Claims 4, 10, 12, 13 and 21 have been canceled. New claims 22-26 have been added. Certain aspects of the invention previously recited by claims 4, and 12-13 have been incorporated generally into new independent claims 22 and 23, respectively. Support for new claims 22-26 may be found on pages 11-14 of the specification. No new matter has been added.

Claims 3, 5-9, 11 and 14-18 have been amended. Claims 3-9 have been amended to depend on new independent claim 22, which replaces canceled claim 21. Claims 6 and 7 have also been amended to clarify how the level shifting circuit and the gain manipulation circuit, respectively, are coupled to the amplifier. Similarly, claims 15 and 16 have also been amended to clarify how the level shifting circuit and the gain manipulation circuit, respectively, are coupled to the amplifier. Claim 14 has also been amended to match the antecedent basis recited in new claim 23. No new matter has been added. Claims 11, and 14-18 have been amended to depend on new independent claim 23, which replaces canceled claim 10. No new matter has been added. Claims 3, 5-9, 11, 14-18, 22-26 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

DRAWINGS

The drawings are objected to under 37 C.F.R. 1.83(a). In particular, the Action notes that the drawings should show every feature of the invention specified by the claims. In particular, the Action states that the system implemented in a scanner

application, an optical mouse application, a video game controller application, a movement encoder application, a near field application and a far field application must be shown in the drawings or the features canceled from the claims.

Claims 9 and 18 are at issue. It is respectfully submitted that the general architecture, design, and operation of the above-noted applications recited in these claims are well-known to those of ordinary skill in the art and described in the prior art. However, the inventive mechanisms according to the invention and the use of these inventive mechanisms in these applications are novel and non-obvious. In this regard, details about these applications need not be illustrated in the drawings in the current application. Consequently, withdrawal of the objection to the drawings is respectfully requested.

REJECTION OF CLAIMS UNDER 35 U.S.C. 112

Claims 3-9 are rejected under 35 U.S.C. 112, second paragraph for the reasons set forth on page 3 of the Action. Specifically, claims 3-9 are rejected as being based on an improperly numbered independent claim. It is noted that claim 4 has been canceled for other reasons, and claims 3, 5-9 have been amended. In response, since independent claim 21 has now been canceled, claims 3, 5-9 have been amended to depend on new independent claim 22, which is properly numbered. Accordingly, it is respectfully submitted that amended claims 3, 5-9 now depend on a properly numbered independent claim. In view of the foregoing, it is respectfully requested that the rejection of claims 3-9 under 35 U.S.C. 112, second paragraph be withdrawn.

REJECTION OF CLAIMS UNDER 35 U.S.C. 102

Claims 3-5, 8-14, 17, 18 and 21 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 3-5 of the Action. Specifically, claims 3-5, 8-14, 17, 18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Krymski (US Pat. No. 6,222,175), which is hereinafter referred to as “Krymski” or as “the Krymski reference.”

The rejections under 35 U.S.C. 102(e) are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

The Federal Circuit has ruled, “Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. . . . In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public.” Akzo N.V. v. United States Int’l Trade Comm’n, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987). [emphasis added.]

Furthermore, the Federal Circuit has held, “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” W.L. Gore & Assocs. v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). [emphasis added.]

Pages 3 to 5 of the Action identify those elements of the Krymski reference that describe or otherwise anticipate the elements as claimed. Specifically, the Office

Action asserts that components 50 and 52 of FIGS. 3 & 4 of the Krymski reference teach the system as claimed. Furthermore, page 6 of the Action responds to some of the points raised in the previous Amendment and Response dated 1/2/2004.

It is respectfully submitted that the Krymski reference fails to teach or suggest each and every element of the system as claimed. For example, regarding new independent claim 22, the Krymski reference fails to teach or suggest inter alia the following claim limitations: “a sampling capacitor that includes a first electrode for coupling to a respective column and a second electrode, wherein the sampling capacitor measures the difference between the light voltage and the reset voltage generated by the photocells in the respective column.”

Regarding new independent claim 23, the Krymski reference fails to teach or suggest inter alia the following claim limitations: “a sampling capacitor that includes a first electrode for coupling to a respective column and a second electrode, wherein the sampling capacitor measures the difference between the light voltage and the reset voltage generated by the photocells in the respective column.”

It is respectfully submitted that the capacitors utilized by Krymski do not fairly teach or suggest the sampling capacitor as claimed. Capacitor C1 does not fairly teach the sampling capacitor as claimed since capacitor C1 of Krymski only holds the sample value. (See, col. 6, lines 23-27 and 35-37) Similarly, capacitor C2 does not fairly teach the sampling capacitor as claimed since capacitor C2 of Krymski only holds the reset value. (See, col. 6, lines 30-34 and 35-37) Moreover, the other capacitors (e.g., C3 to c10) of Krymski do not fairly teach the sampling capacitors as claimed.

The dependent claims incorporate all the limitations of independent claims 22 and 23, respectively. In this regard, the dependent claims also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited reference.

In view of the foregoing, it is respectfully submitted that Krymski reference, whether alone or in combination, fails to teach or suggest the sequential readout circuit and system as claimed.

REJECTION OF CLAIMS 6, 7, 15 and 16 UNDER 35 U.S.C. 103(a)

Claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103 for the reasons set forth on pages 5 and 6 of the Action. Specifically, claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krymski (U.S. Pat. No. 6,222,175) in view of Simerly et al. (U.S. Pat. No. 5,982,424), which is hereinafter referred to as "Simerly et al." or as "the Simerly reference."

The Action states that Krymski does not disclose level shifting circuit or gain manipulation circuit as claimed. However, the Action cites Simerly et al. (col. 7, lines 35-47) for teaching "level shifting and gain manipulation in a similar system." The Action further states "it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide such circuits in the apparatus of Krymski to improve detection."

The rejections under 35 U.S.C. 103 are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application are respectfully requested for the reasons set forth hereinbelow.

The combination of the readout circuit of Krymski with “level shifting and gain manipulation,” purportedly taught by Simerly et al., is contested as improper for the reasons advanced below. However, even if this combination were proper, which is not conceded, the resulting combination would still fail to teach or suggest the claimed invention.

Specifically, it is noted that the Krymski reference, whether alone or in combination with Simerly et al., fails to teach or suggest inter alia the following claim limitations: “a sampling capacitor that includes a first electrode for coupling to a respective column and a second electrode, wherein the sampling capacitor measures the difference between the light voltage and the reset voltage generated by the photocells in the respective column,” as recited in new claims 22 and 23.

THE PROPOSED COMBINATION IS BASED ON IMPERMISSIBLE USE OF THE
CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE
TEACHINGS OF THE KRYMSKI REFERENCE AND THE SIMERLY
REFERENCE

It is respectfully submitted that the Krymski and Simerly references are improperly combined. It appears that the Action uses improper hindsight to selectively pick pieces from the Krymski reference and pieces of the Simerly reference to arrive at the claimed invention.

First, it is respectfully submitted that the Krymski reference does not explicitly or implicitly teach or suggest any motivation to add any circuits across the negative input terminal and the output terminal of the amplifiers (e.g., amplifiers 67 and 68) for level shifting or gain manipulation as claimed. For example, FIG. 4 only shows the typical feedback capacitor (e.g., C3 and C4) and a reset switch (e.g., M11 or M12) coupled across the negative input terminal and the output terminal of the amplifier (e.g., 67 and 68). Col. 5, lines 8-16 of Krymski states

Each switched integrator 74 (or 76) includes an operational amplifier 67 (or 68), a feedback capacitor C3 (or C4) coupled between the output and the negative terminal of the operational amplifier, and a reset switch M11 (or M12) coupled between the output and the negative terminal of the operational amplifier. Each integrator 74 (or 76) selectively can be reset by turning on the associated reset switch M11 (or M12) using a signal (CL) applied to the gate of the reset switch.

Second, it appears that elements 32 and 34 of Simerly et al. are for signal processing of a video signal downstream from the readout circuit as claimed. For example, FIG. 3 of Simerly et al. and related description (col. 5, lines 9-24) clarify that CCD imager IC 24 (in CCD card 20) generates an output signal representing the pixel values. Even level shifter 26 and amplifier 28 of FIG. 3 appear to be downstream from the initial generation of an output signal that represents the pixel value, which is performed by the readout circuit as claimed.

Furthermore, the AGC 32 and level shifter 34 of Simerly et al. appear to be utilized for a completely different purpose and application (e.g., image compression and

a video telephone application) than the readout circuit as claimed. Specifically, AGC 32 and level shifter 34 appear to be components used by the adaptive compression control mechanism of Simerly et al. to control “the timing of clock pulses (C8) to be compatible with an optimize an MPEG compression engine.” (See col. 5, lines 5-8). Consequently, it is respectfully submitted that AGC 32 and level shifter 34 are very different from and do not fairly teach the gain manipulation and level shifting circuits as claimed.

Although the Action suggests that the readout circuit of Krymski can be modified with level shifting and gain manipulation (e.g., elements 32 and 34) of Simerly et al., the Federal Circuit has stated, “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. ... “[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]

Consequently, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from

the Krymski and the Simerly references to arrive at the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, “It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated, “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), *In re Fritch*, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, “The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.” *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)

Accordingly, hindsight reconstruction may not be used to pick a component from Krymski and another component from Simerly et al. to arrive at the invention as claimed. Accordingly, it is respectfully requested that the rejection of claims 6, 7, 15 and 16 under 35 U.S.C. 103(a) be withdrawn.


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In view of the foregoing, it is respectfully submitted that Krymski reference, whether alone or in combination with the Simerly reference, fails to teach or suggest the system and sequential readout circuit as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. section 103(a) be withdrawn.

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.

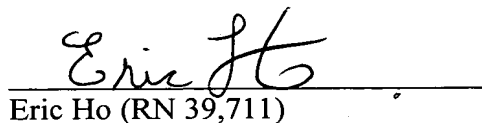
Respectfully submitted,



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May 13, 2004
(Date)